Installation Guide

P117F(R)

STACKABLE ETHERNET SWITCH WITH ATM UPLINK

AVAYA

Important Information

SAFETY PRECAUTIONS

CAUTION – TO REDUCE THE RISK OF ELECTRIC SHOCK AND FIRE

1. All servicing should be undertaken ONLY by qualified personnel. The parts inside the unit CANNOT be serviced or repaired by the end user. Please call your service representative for assistance.
2. Do NOT plug in, turn on or attempt to operate a damaged unit.
3. Ensure that the chassis ventilation slots in the unit are NOT BLOCKED.
4. Replace a "blown" fuse only with the same type and rating as is marked on the safety label adjacent to the power inlet housing the fuse.
5. DO NOT operate the unit in a location where the maximum ambient temperature exceeds 50ºC.
6. Be sure to unplug the power supply cord from the wall socket BEFORE attempting to remove and/or check the main power fuse.

PRECAUTIONS DE SECURITÉ

AVERTISSEMENT – POUR RÉDUIRE LE RISQUE DE CHOC ÉLECTRIQUE ET D'INCENDIE

1. Tout entretien doit être fait UNIQUEMENT par un personnel de service qualifié. Aucun élément ne peut être réparé par un particulier.
2. NE PAS brancher, allumer ou essayer de faire fonctionner une unité sur laquelle un doute existe quant à son bon fonctionnement.
3. S'assurer que les ouvertures d'aération du châssis dans l'appareil NE SONT PAS OBSTRUEES..
4. Remplacer un fusible défaillant UNIQUEMENT par un modèle du même type suivant les recommandations indiquées sur l'étiquette de securité posée dans le logement du fusible.
5. NE PAS faire fonctionner l'appareil dans un endroit où la temperature dépasse les 50ºC.
6. S'assurer de débrancher l'alimentation électrique AVANT toute manipulation sur le fusible principal.

SICHERHEITSVORKEHRUNG

ACHTUNG – ZUR VERHINDERUNG DES RISIKOS VON ELEKTRISCHEM SCHLAG UND FEUER

1. Die Geräte enthalten keine Bauteile, die außerhalb des Avaya Servicezentrums gewartet oder repariert werden können. Die Wartung darf NUR von qualifiziertem, technischem Personal durchgeführt werden.
2. NIEMALS ein beschädigtes Gerät einschalten, oder versuchen es zu bedienen.
3. Vergewissern Sie sich, dass die Chassis Ventilationsöffnungen des Gerätes NICHT BLOCKIERT sind.

4. Austauschen einer durchgebrannten Sicherung NUR mit der gleichen Sorte und Belastbarkeit wie sie auf der Sicherheitsaufschrift markiert ist. Die Aufschrift befindet sich neben der Stromzufuhr wo sich auch der Sicherungskasten befindet.
5. Bedienen Sie das Gerät NICHT an einer Stelle an der die Umgebungstemperatur 50ºC übersteigt.
6. Ziehen Sie das Netzkabel raus, BEVOR Sie versuchen die Hauptsicherung zu kontrollieren oder auszutauschen.

Overview

This guide is divided into four main sections:

- Overview: A general description of the features of the Avaya Stackable Switch and P117FR (jointly referred to as the P117F(R)).
- Installation: Instructions for getting the P117F(R) Stackable Switch and P110 stack up and running.
- Software Download: Step-by-step guide to downloading a new software version to the P117F(R) Stackable Switch on-board agent
- Appendix: Pin Assignments for the console RJ45 connector.

Description

The P117F(R) is part of the P110 Switching System family of switches. The P110 family is composed of high-performance switches which may be used singly or stacked in any combination to make up a multi-protocol, non-blocking, scalable switch.

The P117F has 16 Ethernet (10BASE-T) ports and one 155 Mbps ATM port.

The P117FR has an additional ATM port for redundancy. The 10 Mbps ports are typically used for workgroup connectivity, while the ATM port(s) can be used as an uplink to an ATM backbone.

The P117F(R) can operate standalone or as part of a stack. A stack can be made up of any combination of two, three or four P110 switches, and up to 32,000 MAC addresses per stack are supported. A stack requires a P110 NMA to link the switches. The units are physically linked using the P110 Exoplane, which makes up a multi-gigabit, non-blocking backplane.

The P117F(R) can use Avaya automatic fairness mechanism on the Ethernet ports to ensure that all ports gain fair access to the P110 Exoplane even at very high network utilization. Congestion management works both on full and half duplex ports, and ensures no packet loss should the buffers become saturated during peak load conditions. A backup power supply (P110 BUPS) can be used for increased fault tolerance.

P110 switches are fully manageable using MSNM, the Avaya SNMP-based management system (or CajunView), and may be monitored using the SMON Manager Switch Monitoring Application.

Installation

Setting the DIP switches

First, set the DIP switches. The position of the switches depends on the application. The drawing below shows the default positions of the DIP switches on the rear panel of the P110 switch.

Figure 1   The P117F(R) Stackable Switch Rear Panel Showing the DIP Switches in their Default Positions
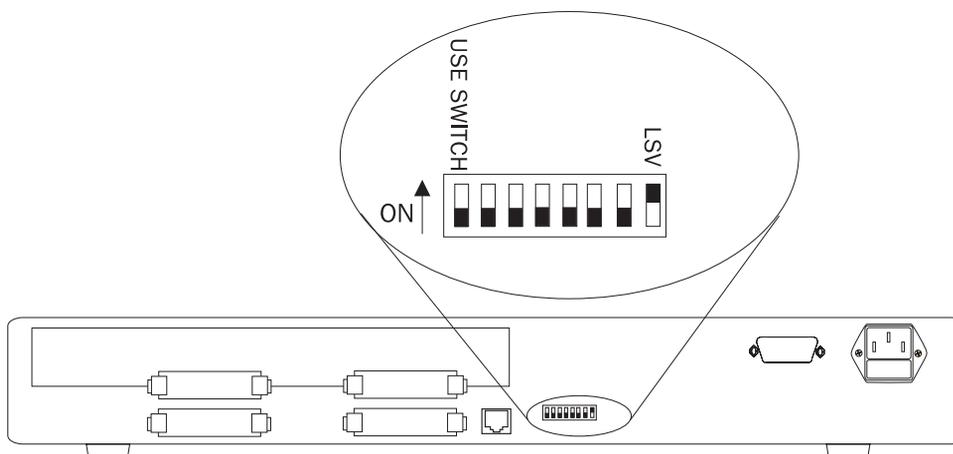
- LSV – Last SW Version: The on-board agent of the P117F(R) can use either the latest downloaded software or a "Basic" version. The Basic version is factory loaded.

ⓘ Ensure the Use Switch is set to the OFF position.

Once you have set the DIP switch, you may proceed with the physical installation of the switch.

Table 1   DIP Switches on the P117F(R) Stackable Switch

Switch	Function	OFF	ON (Default)
LSV	Last SW Version	Use the "Basic" software version. This is known as *Bank A*	Use the latest downloaded agent software. This is known as *Bank B*
USE SWITCH	Not applicable, for future use only		

Installing the P117F(R) Stackable Switch

The procedure for getting the P117F(R) Stackable Switch up and running depends on whether the switch is to operate in standalone or as part of a stack.

Standalone Operation - Plug 'n' Play

Getting the P110 switch working is quick and easy:

1. Connect the power cable to the switch,
2. Connect the cables to the front panel ports,

The switch is now fully operational.

To ensure proper ventilation, ensure that the P110 NMA slot is closed.

Keep the P110 Exoplane cables that came with the P110 switch in a safe place. You will need them when you add another switch to the P110 stack.

The P117F(R) contains an on-board agent. The Software Download section on page 13 explains when you need to upgrade the on-board software to a higher version.

Stacking Operation

Before beginning to operate with the P117F(R) you need to allocate it an IP address. Please refer to Agent Access Address on page 22.

To make the P117F(R) work as part of a stack the P110 NMA with the correct software version is required. See the P117F(R) Stackable Switch Release Notes for the required version. Also the on-board agent must have the same agent version number as the P110 NMA.

To check what software version you have, see the agent configuration window in CajunView (on UNIX) or MSNM or CajunView Manager (on Windows), or see the setup main menu of the P110 NMA.

1. Turn off the main power to the stack, by individually switching off each switch.
2. Place the P110 NMA in the top switch of the stack if it is not already there.
3. If the P110 NMA and P117F(R) on-board agent contain the latest software version, go to step 4.
   If the P110 NMA does not contain the latest software version, you have to perform software download of the latest version. The software is on the diskette that came with the P117F(R). Download is performed via the Software Update Manager in MSNM or in CajunView or via TFTP using a terminal – details can be found in the P110 NMA Installation Guide. (The download procedure itself is the same as that described in Software Download on page 18 of this document).
   If the P117F(R) on-board agent does not contain the latest version, perform the download as described in Software Download to the On-Board Agent on page 13.

4.   Place the P117F(R) or other P110 switches in the stack. The P110 NMA must be in the top switch of the stack.
     To ensure proper ventilation, ensure that all empty P110 NMA slots in the stack are closed.

5.   Connect P110 switches using the supplied P110 Exoplane cables, as shown in Figure 2. A switch connects to its upper neighbor through two Exoplane cables, and to its lower neighbor through another two Exoplane cables. Make sure you securely fasten the cables to the connectors.

Cabling Requirements:

•   For correct operation, the P110 Exoplane must be fully connected, with all units powered up. In a stack configuration, the P110 NMA **must** be installed and connected to the P110 Exoplane.
     Failure to observe this requirement will cause the P110 units to block all traffic on attached stations and segments.

•   When using the P114T or P114F in the stack, make sure all switches in the stack are connected using P110 Exoplane cables (part number 108362203, with white connectors and marked C/S:B) of the type supplied with the new P110 switch. Extra cables can be ordered from your local Avaya representative.

Figure 2   Rear view of a P110 stack, showing how the switches are linked via the P110 Exoplane cables. A P110 NMA resides in the uppermost switch.
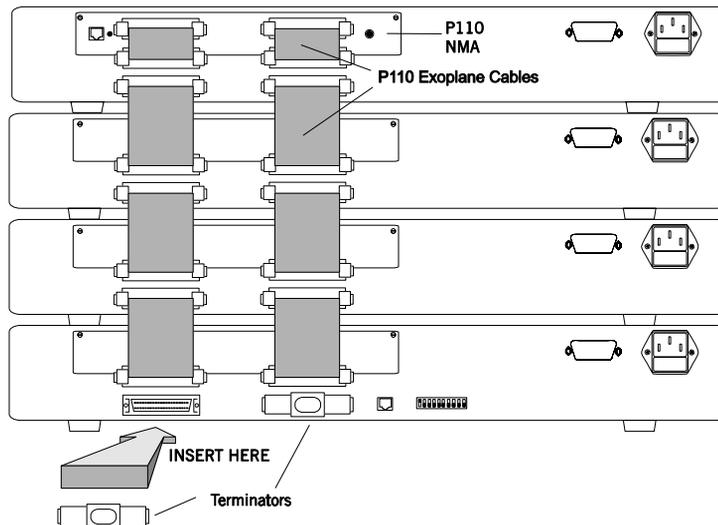
6.   Two terminators are supplied with the P110 NMA. Insert the two terminators into the lowest two connectors at the bottom of the stack, as shown in Figure 2.

7.   Turn on the mains power to the stack, by individually switching on each switch.

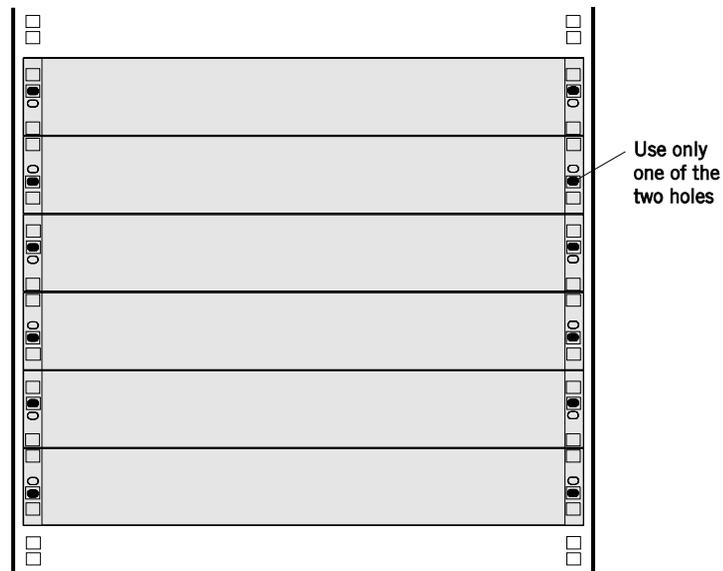8.   Connect the cables to the front panel ports.

ⓘ   The P110 NMA and the on-board agent in all P110 switches (e.g., P117F(R) and P113F) must have the same version number.

Rack Mounting

P110 switches slot into a standard 19-inch rack. If the switches are to be rack mounted, first place them in the rack, then connect the P110 Exoplane, as follows:

1. Snap open the ends of the front panel to reveal the fixing holes.
2. Slot the switch into the rack. Insert the switches into the rack so that the switches in a logical stack lie directly on top of each other. Ensure that the P110 screw holes are aligned with the rack hole positions exactly as shown in Figure 3 Stacking them in this way will allow the switches to be easily connected using the Exoplane cables.
3. Secure the switch in the rack using the screws. Use one screw on each side. Do not overtighten the screws to avoid damaging the plastic.

Figure 3   P110 rack mounting arrangement

Use only one of the two holes

Key

☐ Hole in rack

○ Screw hole in P110

● Screw position

4. Connect the P110 Exoplane cables, as described above, and as illustrated in Figure 2.
5. Snap closed the hinged ends of the front panel.

Diagnostics

Tables 2 and 3 explain the meaning of the P117F diagnostic LED indicators.
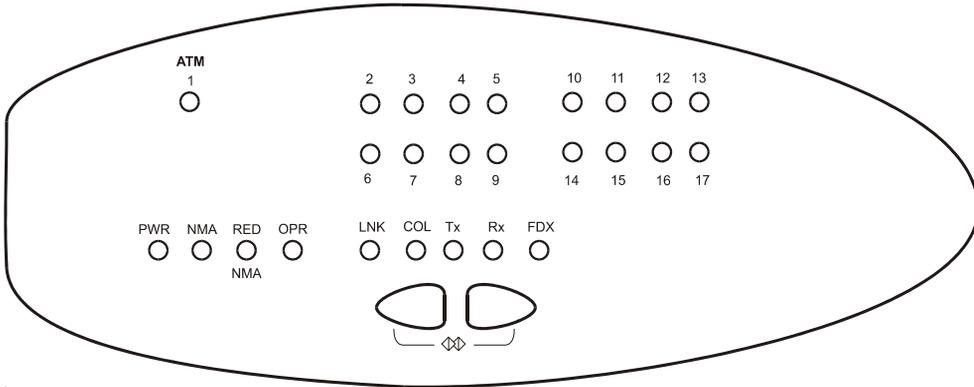
Figure 4   The P117F Front Panel LEDs and Buttons

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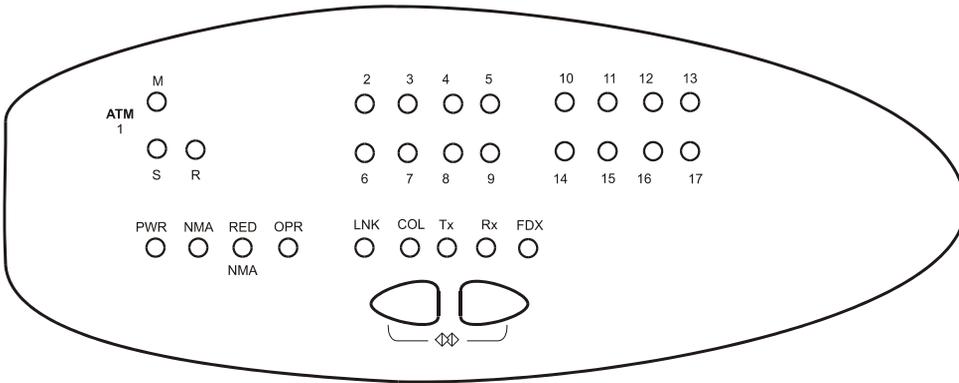*Figure 5   The P117FR Front Panel LEDs and Buttons*

Table 2   Meaning of the P117F Front Panel Buttons

Button	Function	Meaning
⬭ ⬭	Select	The buttons determine what function will be displayed by the 17 Port LEDs (the top two rows of LEDs).
		The five Function LEDs (above the Select buttons) show which function is currently displayed by the Port LEDs. The Port LEDs can display either Link, Collision, Transmit, Receive or Full Duplex.
		If, for example, the Link (LNK) LED is lit, then LEDs 1 to 17 will display the Link status of every port.
		(For P117FR ATM port LEDs, see also Table 4).
		Press left or right button to toggle the Port LED display between functio
◁▷	Reset	Press and hold both buttons simultaneously for two seconds to reset the *entire* P110 stack. In a Reset, all LED indicators turn on. Pressing Reset does not affect configuration settings.

Table 3   Meaning of the P117F(R) Stackable Switch front panel LEDs

LED Indicator		Function	Status	Meaning
PWR		Power	OFF ON Blink	Mains power not connected Mains power connected Working on back-up power supply
NMA		Agent	OFF ON	No agent in this module This module contains an active agent
RED NMA		Reserved for future use		
OPR		CPU Operation	OFF Blink	CPU is OK CPU is faulty
Function LED			Port LED	(1 to 17)
	LNK	Link status	OFF ON Blink once Blink twice	Port Disabled Port is enabled and link is OK Link Test Fail Partition (Ethernet only)
	COL	Collision	OFF ON	No Collision (ATM is always OFF) Collision occurred on line (Ethernet only)
	Tx	Transmit to line	OFF ON	No activity Data transmitted
	Rx	Receive from line	OFF ON	No activity Data Received
	FDX	Half/Full	OFF	Half duplex connection to port

LED Indicator		Function	Status	Meaning
		duplex	ON	(Ethernet only) Full duplex connection to port (ATM is always ON)

Table 4   Meaning of the additional P117FR front panel LEDs

LED Indicator	Function	Status	Meaning
M S	Master port (Upper ATM connector) Secondary port (Lower ATM connector)	Port LEDs for the ATM ports	These Port LEDs indicate status according to the functional LEDs (see Table 3)
R	Redundancy status	OFF ON Blink	Redundancy is disabled. Upper port active Redundancy is enabled. Upper port active Redundancy is enabled, and secondary port (Lower ATM connector) is active

Software Download to the On-Board Agent

The P117F(R) contains an on-board agent. This agent does *not* use the same software as the P110 NMA.

When you receive the P117F(R), its on-board agent comes pre-loaded with fully functional software. New software is made available at regular intervals. You should make sure that all P110 units contain the latest available software.

Software download to the P117F(R) is performed via a console terminal connected to the serial port on the rear panel of the P117F(R) or via SNMP using a CajunView or MSNM network management station. Instructions can be found in the appropriate documentation.

The following sections explain how to download software to the P117F(R) via a console terminal.

When working in a stack (2, 3 or 4 P110 switches), a P110 NMA should be inserted into the topmost switch of the stack and the appropriate software version downloaded separately to it. The software is on the diskette that came with the P117F(R).

For instructions on how to download software to the P110 NMA, see the P110 NMA Installation Guide (the download procedure itself is the same as that described below).

ⓘ You must first update the P110 NMA *before* you add the P117F(R) to the stack.

Connecting the Console Terminal

Software download to a P117F(R) Stackable Switch can be performed via a console terminal connected to the serial port labeled **Console** on the P117F(R).

To connect the P117F(R) to a console terminal:

1. Turn on the VT52 or VT100 terminal (or PC in terminal emulator mode) and set its communication parameters to:
   Baud Rate: 9600 bps
   Start Bit: 1
   Data Bits: 8
   Stop Bit: 1
   Parity: none
   Refer to your console terminal's user manual for instructions on how to set these parameters.
2. Insert the RJ-45 cable into the **Console** port of the P117F(R) (cable pinouts can be found in the Appendix to this guide).
3. Insert the other end of the cable into the terminal's RS-232 port.
4. Press Enter to verify that the cabling process was successful.

Software Download Summary

Below is a procedure checklist for successfully configuring a P117F(R) for SNMP management. Instructions for each item in the list can be found in the pertinent sections of this guide.

- ✓ If necessary, enter an IP address for the P117F(R), and reset the switch.
- ✓ If you're using routers, set up a default gateway.
- ✓ Perform software download.
- ✓ Set SNMP Community

Setup Menus

Setup Main Menu

A series of menus guides you through the configuration process. After the switch enters setup mode, the first screen of the setup session is automatically displayed. It shows the current configuration of the agent.

ⓘ   Underlined spaces in the example screens represent variables.

```
                        Description of Agent Parameters
                        S/W Version: _____   Slot #: _____


HUB Type: Cajun P110
Trap Community Name: _____
Read/Write Communities:
   1. _____         2. _____         3. _____
   4. _____         5. _____


Interfaces        Physical Address      IP Address       Netmask
InBand Interface: 00:40:0d:00:00:05   000.000.000.000 000.000.000.000 (0x00000000)


>> Enter 0 to return to the previous menu or <CR> to continue:
```

Press **Enter** to view the Setup Main Menu.

Notes:

- The following Setup Main Menu is correct for a stand-alone P117F(R) module without an NMA agent card inserted.
- An NMA module is required in a stack configuration. In this case options 5 and 6 are set via the P110 NMA setup menus and options 8 through 15 are renumbered 6 to 12.
- The "ATM Redundancy" option appears only in the P117FR. The numbering of the menu items will change accordingly.

```
                         Setup Main Menu
                Cajun P117F S/W Version: ____   Slot #: ____
0. Return to Agent Description screen
-------------------------------------
1. Reset the Module
2. Software Download ...
3. Agent Access Addresses ...
4. IP Routes ...
5. SNMP Community ...
6. Permanent Managers ...
7. Module Advanced Configuration ...
8. (5.) UNI Version ...
9. (6.) ATM Physical Media ...
10. (7.) ILMI/ATM Address ...
11. (8.) LECS ATM address ...
12. (9.) ELAN configuration ...
13. (10.) ATM Redundancy...
14. (11.) Set ATM port parameters to their default values
15. (12.) Set Ethernet Ports' parameters to their default values
>>>Enter your choice:
```

How to Navigate through the Setup menus

- All Setup menus conform to the following display conventions:

This symbol	Means
...	This item has a sub-menu
[ ]	This item has a sub-menu to insert parameter values
1, 2, 3, etc.	Denotes a sequence number. To select an item from any menu, type its sequence number

- Setup sub-menus display the following standard functions:

This function	Means
Return to Previous Menu	Go back one menu level
List	List the current values for the selected parameter
Save the Session	Save and store changes to the selected parameter, and activate changes. When saving the session, the changes become active (no need for reset), and stored in the non-volatile memory.
Reset the Agent	This is needed when assigning an IP address and ATM parameters to the Agent. In other cases, the Agent will activate new parameter values, when the user chooses the "Save the Session" option.

- If you forget to save changes or reset the agent when necessary, the following warnings will remind you to do so before exiting the relevant sub-menu of the Setup session:

This WARNING	Means
No save since last change. Save? y/[n]:	Type <**y**> to save parameter changes. If you type <**n**> all changes will be lost.
* IP address was changed. Reset the agent!!!	Agent must be reset in order to activate IP changes. Reset may be done after each change or at the end of the entire Setup session.

Parameter configuration

The following sections provide step-by-step instructions for configuring each parameter.

ⓘ In many module configuration menus, the following parameters are displayed:
- `Display Current Version` shows the active configuration.
- `Display Configured Version` shows the new configuration which will take effect after a reset has been made.
- `Display Default Version` shows the system default configuration.

<CR> — Refresh The Screen

Type Enter to clear the screen and re-display the current displayed Menu with the updated parameters.

1 — Reset the Module

If you have changed certain parameters of the P117F(R), the P110 NMA or other switches in the stack, you must reset the agent before you exit the Setup session. The following lists the resets you must initiate and the resets performed automatically by the agent.

Resets the user must initiate	Resets performed automatically by the agent
After setting ATM port parameters to their default values	The first time you set VLANs
Change in the "Use switch" or any other DIP switch of any other switch	Set Ethernet ports' parameters to their default values
After changing the LSV DIP Switch position	

Resetting does not affect any other parameters. You will be asked to confirm the reset before it is executed.

```
Reset the Agent. *Confirm?*  y/[n]:
```

2 — Software Download

General

When you receive the P117F(R), its on-board agent comes pre-loaded with fully functional software. New software is made available at regular intervals. You should make sure that all P110 units contain the latest available software.

The P110 on-board agent software is stored in flash memory and can be upgraded via software download using the TFTP protocol.

In the P110 on-board agent, the flash memory contains **two** independent software versions: the "Basic" and the "Application" version. The Application version is the one that the P117F(R) will use in normal operation. If the Application version is found to be faulty, the Basic version will be used instead if a failure occurs during download.

Caution: Download the Basic version only when the new Application version is working correctly. This will ensure that if there is a problem with the application version, the agent will be able to switch to a valid Basic version.

The TFTP Process

The agent software file should be placed on a computer that can be located anywhere on the network. During the TFTP process, the computer acts as the Server and the agent as the Client. From the Terminal, the user configures the agent with the IP address of the TFTP server, the file name to be downloaded, and the download destination bank. The Agent then gets the specified file from the server.

During the download process the user can monitor the process status parameters by using the Monitor Software Download Process sub menu. The agent remains fully functional during the download process. At the end of a successful download, the whole stack resets automatically.

Software Download Procedure

Before starting the download procedure, do the following:

1. Ensure that the supplied agent software file resides on a computer with TFTP server capabilities.
2. Ensure that the file is accessible to the agent. Contact the agent from the TFTP server by typing **ping** *<ip_address_of_agent>*.

Download software to the agent as follows:

1. Select **Software Download** from the Setup Main Menu. This opens the Software Download menu shown below.

```
                    Software Download Menu (Using TFTP/IP)

                Visage 16155(R) S/W Version:_____   Slot #:_____


<CR> Refresh the screen

0. Return to Previous Menu

1. Save the Session

2. List

--------------------------------

3. TFTP Server and File parameters

4. Start Software Download process

5. Monitor Software Download process


>>>Enter your choice:
```

2. Select **TFTP Server and File parameters** from the Software Download menu. This opens the menu shown below.

```
TFTP Server IP address: 000.000.000.000
File Name: _____
Destination: Flash B (Application)
>>>Enter Server IP address [000.000.000.000]:  135.49.60.115
>>>Enter File Name:  /home/v16155
>>>Enter Destination  (1-Flash A (Basic), 2-Flash B (Application)): 2
```

3. Type the IP address of the TFTP server and press Enter.
4. Type the full Path and File Name (v16155) of the agent software and press Enter.
5. Type the destination memory location of the software. The Application version is stored in Flash memory bank B, and the Basic version is stored in memory bank A. If you wish to download a new Application version, type **2**-Flash B as the destination, and press Enter.

Caution: Do not download the Basic version until the Application version is working correctly.

6. Select "Save the Session".
7. Select **Start Software Download process**. You will get a warning and a confirmation prompt, as follows:

```
*** Warning – Perform Software Download ***, Confirm [y/n]?
```

8. Select "y".
9. Keep track of the progress of the software download by selecting **Monitor Software Download process**. Press Enter to get an update of the download process.

```
                    Agent Software Download Monitoring Screen
               Visage 16155(R) S/W Version: ____   Slot #: ____


                         TFTP Server: 135.49.60.115
                           File Name: c:/home/v16155
                         Destination: Flash Bank B (Application)


Download State : tftp-running-ip
Activity Status : Download Process Started
Download Size   :
-------------------------
<CR> Refresh the screen
 0   Return  to previous menu
-------------------------
>>>Enter your choice:
```

10. The P110 will now automatically Reset itself.

Troubleshooting Software Download

The following are Activity Status messages that can appear during software download, their meanings, and what you should do about them:

Activity Status message	Description	Suggested action
file format unknown		Ensure that the correct agent software file is being downloaded to the agent
file not found	Failure of TFTP Get	Type in the correct filename
server is unreachable	Failed to find the server after 1 minute	Type in the correct TFTP Server IP address. Ensure the server is accessible to the agent by typing **ping** *<ip_address_of_agent>*. Alternatively, if a router is required to reach the server, type in the router address from the IP Routes menu explained on page 24.

3 — Agent Access Addresses

This parameter stores IP addresses for the P117 agent's communication interfaces in stand-alone mode. The interface addresses facilitate communication between the agent and the management station. By assigning an IP address to the agent interface, you make that interface available for agent-manager communications.

The agent also stores a *Netmask* for each communication interface. The Netmask defines which portion of the IP address represents the network ID and which portion represents the Host ID (or network node). Bits in the Netmask are set to one for all bits that correspond to the network portion of the IP address (i.e., 255 in decimal). Bits in the Netmask are set to zero for all bits that correspond to the Host ID of the IP address (i.e., 000). For example, if IP address 135.49.60.115 is assigned a Netmask of 255.255.255.000, it means that "**135.49.60**" defines the network (in this case, a subnet), and "**115**" defines the actual node (host) on that network.

To assign an IP address and/or Netmask:

1. Select **Agent Access Addresses** from the Setup Main Menu. This opens the sub-menu shown below.

```
                      Agent Access Addresses
                Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen
0. Return to Previous Menu
1. Save the Session
--------------------------------
Interfaces    IP Address    Netmask
2. InBand Interface 149.049.150.101     255.255.255.000  (0xffffff00)


>>>Enter your choice:
```

2. Select **InBand Interface**. The following prompt line displays:

```
InBand Interface IP address: 149.049.150.101, netmask: 255.255.255.0.
>>> Enter InBand Interface IP address [149.49.150.101]: 149.49.39.85
>>> Enter InBand Interface netmask [255.255.255.0]: 255.255.0.0
```

3. Type the new IP address as shown in the example above and press **Enter.**
Leading zeroes may be omitted.

4. After the IP address is accepted, the Netmask prompt is automatically
displayed. The prompt has a default value based on the IP address.

5. Type the new Netmask value in the correct format or press **Enter** to accept the
default value.

6. Type **0** to return to the main menu.

ⓘ Changes to IP Addresses and Netmasks require you to reset the agent. You
may reset the agent now, or at the end of the entire Setup session.

4 — IP Routes

When the P117F(R) is in stand-alone configuration and is connected to one side of a router (on one network) and the file containing the new software is located on the other side of the router (on a different network), you must set up a communication path via the IP Routes parameter. An IP Route determines which gateway (i.e., router) will be used to communicate with the P117F(R).

Whenever the agent sends a packet to a management station that does not reside on the same network, the agent searches an internal table to determine via which router the packet should travel. Part of this internal table is built from the data you enter for the IP Routes parameter. The IP Routes parameter correlates host or network destination addresses (of management stations) with gateway addresses.

You may define multiple IP Routes from the agent to the management station. As the agent searches the IP Routes table, it will select the gateway that was added last. If that gateway is unavailable, it will proceed to the gateway added before the last one, and so on.

You may also define a default gateway for all management stations rather than define a specific gateway for each possible destination. If the agent cannot find a particular network or host destination address in its IP Routes table, it will use the default gateway (the default gateway is correlated with destination address 000.000.000.000). If the agent cannot find a particular network or host destination address and no default gateway has been defined, the packet will not be sent.

If an agent or P110 stack does not appear on a management station as expected, it may be as a result of the agent not including this station in its IP Route table. Ping the agent to see if the agent is active. The agent and stack may be operating normally even though the management station is not communicating with the agent.

To define an IP route, you must supply:

- The IP address of the station or the network (not subnet)
- The IP address of the gateway (router).

To define an IP Route:

1. Select **IP Routes** from the Setup Main Menu. This opens the IP Routes sub-menu shown below.

```
                         IP Routes menu
              Visage 16155(R) S/W Version: ____   Slot #: ____


<CR>    Refresh the screen
0       Return to previous menu
1       Save the Session
2       List - static routing table
--------------------------------
3       Add[]
4       Delete[]


>>>Enter your choice:
```

2. Select **Add** to define a new IP Route.
   Select **Delete** to remove an existing IP Route.

3. Type the destination address of a host (IP address of the management station) or a network (IP of management network) as shown in the menu below and press **Enter**. *For a default gateway, leave the destination address as 000.000.000.000.*

```
                      IP Route parameters menu
              Visage 16155(R) S/W Version: _____   Slot #: _____


<CR>   Refresh the screen
 0     return to the previous menu
----------------------------------------------------------------------
      Destination       Gateway
1    154.32.74.12      149.43.63.123
2    154.32.74.53      149.43.69.1
3    000.000.000.000   149.43.63.123
↓...
10   000.000.000.000   000.000.000.000
11   000.000.000.000   000.000.000.000
>>>Enter route destination address (nnn.nnn.nnn.nnn): 150.61.23.18
>>>Enter route gateway IP address (nnn.nnn.nnn.nnn): 135.49.50.1
```

4. Type the Gateway IP address (address of the router) and press **Enter.**
5. To review your changes, select the **List** command.
6. To save your changes select **Save the Session**.
7. Type **0** to return to the Setup main menu.

Changes to IP Routes do not require you to reset the agent.

5 – SNMP Community *(Not applicable for P117F(R) Stackable Switch in a stack)*

This parameter defines the trap, read-only and read-write communities. The community name can be up to 24 characters in length.

ⓘ   The default community for all three options is `public`.

```
                         SNMP Community Menu
                Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
------------------------------------
1. Trap Community []
2. Read-Only Community []
3. Read-Write Community []
>>>Enter your choice:
```

Select Trap Community to change the Trap community (the SNMP community to which traps are sent):

```
                         Trap Community Menu
                Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
1. Save the Session
---------------------------------
2. Update []
```

1.   Select Update to change the community:

```
                         Trap Community Menu
                 Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
1. Save the Session
-------------------------------
2. Update []


>>>Enter your choice: 2
Trap Community name is: public
>>>Enter Trap Community name (24 char):hardware-alpha
```

2.   Enter the community name (or Enter to leave it unchanged).
3.   Select "0. Return to Previous Menu" to return to the previous menu **without** saving the changes.
4.   Select "1. Save the Session" to save the changes, then "0. Return to Previous Menu" to return to the previous menu.

A similar procedure is used to change the Read-Only and Read-Write communities.

6 – Permanent Managers *(Not applicable for P117F(R) Stackable Switch in a stack)*

This option allows you to define up to ten management stations which can receive alarms.

```
                      Permanent Managers Menu
               Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
1. Save the Session
2. List
---------------------------------
3. Add []
4. Delete []
5. Update []
>>>Enter your choice:
```

Listing Permanent Managers
1. To list permanent managers, select List:

```
                      Permanent Managers


1  - 149.49.42.90
2  - 0.0.0.0
3  - 0.0.0.0
4  - 0.0.0.0
5  - 0.0.0.0
6  - 0.0.0.0
7  - 0.0.0.0
8  - 0.0.0.0
9  - 0.0.0.0
10  - 0.0.0.0
>>>Enter CR to continue:
```

2. Press Enter to return to the Permanent Managers Menu.

Adding Permanent Managers

1. To add permanent managers, select Add:
2. Type in the IP address of the permanent manager and press Enter.

Deleting Permanent Managers

1. Select Delete from the Permanent Managers Menu:
2. Select the index number (1 - 10) of the permanent manager you wish to delete and press Enter.

Updating Permanent Managers

1. Select Update from the Permanent Managers Menu:
2. Select the index number (1 - 10) of the permanent manager you wish to update and press Enter.
3. Enter the new IP address and press Enter.
4. Press Enter to return to the Permanent Managers Menu.

7 – Module Advanced Configuration *(Not applicable for P117F(R) Stackable Switch in a stack)*

This option is not currently implemented.

8 (5) – UNI Version

This option determines the UNI version used for the P117F(R). Before changing the UNI Version check that the ATM switch supports this version.

To display or update the UNI version select UNI Version:

```
                          UNI version menu
                Visage 16155(R) S/W Version: _____   Slot #: _____


<CR> Refresh the screen


0. Return to Previous Menu
------------------------------
1. Display current UNI version
2. Display configured UNI version
3. Display default UNI version
------------------------------
4. Change configured UNI version


>>>Enter your choice:
```

Changing the UNI Version

1.   Select "Change configured UNI version":

```
Current UNI version        : 3.1
      Configured UNI version      : 3.1
      Default UNI version         : 3.1


>>> Enter new version (0 for 3.0, 1 for 3.1): 0
>>> PRESS Enter to continue:
```

2.   Enter the new version (0 for UNI version 3.0 *or* 1 for UNI version 3.1) and press Enter (to cancel, do not enter a value and press Enter).
3.   Press Enter to return to the UNI version menu.

ⓘ   You will need to reset the unit in order to implement the change.

9 (6) – ATM Physical Media

This option allows you to change the ATM media to be SONET or SDH. To access the ATM physical media menu select ATM Physical Media. Before choosing the ATM Physical Media, check that the ATM switch supports this media type.

```
                          ATM physical media menu
                 Visage 16155(R) S/W Version: ____   Slot #: ____



<CR> Refresh the screen



0. Return to Previous Menu
----------------------------
1. Display Current       ATM Physical Media
2. Display Configured    ATM physical media
3. Display Default       ATM physical media
----------------------------
4. Change ATM physical media


>>>Enter your choice:
```

Changing the ATM Physical Media

1.   To change the media, choose Change ATM physical media:

```
    Current ATM Physical media               : SONET
    Configured ATM Physical media            : SONET
    Default ATM Physical media               : SONET


>>> Enter new value : SDH or SONET :   SDH


 Updated. Now SDH


*** WARNING *** - ATM physical media changed. Reset the agent !!!


>>> PRESS Enter to continue:
```

ⓘ   You will need to reset the unit in order to implement the change.

10 (7) – ILMI/ATM Address

This option allows you to define how the ATM address prefix will be allocated to the P117F(R) unit. To access the ATM address prefix menu select ATM Address:

```
                         ILMI/ATM address menu
               Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
--------------------------------------
1. Display current ATM address prefix
2. Display configured ATM address (ILMI)
3. Display default ATM address (ILMI)
--------------------------------------
4 Change configured ATM address (ILMI)


>>>Enter your choice:
```

Changing configured ATM address (ILMI)

1. To change the configured ATM address prefix select "Change configured ATM address (ILMI)".
   You can define the ATM address in two ways: *either*
- Type **0** for the P117F(R) to use the ILMI protocol to obtain the 13-byte ATM prefix from the ATM switch, *or*
- Enter 19 bytes manually: the 13-byte ATM prefix and the 6-byte ATM ESI. The manual option is intended for switches that do not support the ILMI protocol.

```
       Current ATM address prefix   : 39.00.00.00.00.00.00.00.00.6f.07.c0.cb
       Configured ATM address       : using ILMI
       Default ATM address          : using ILMI


>>> Enter ATM address (xx.xx ... 19 bytes, 0 for using ILMI) :
39.00.00.00.00.00.00.00.00.5a.07.cf.cb


>>> PRESS Enter to continue:
```

2. Press Enter to return to the ATM address prefix menu.
3. Reset the module for the changes to take effect (press 0 to return to Main Menu and then 1 to Reset).

11 (8) – LECS ATM Address

This option allows you to change the LECS ATM address. This address is derived using the following algorithm:

1. Address entered by the user
2. ILMI (if the user has not entered a value)
3. Well-known address (WKA)
4. VP0 VC17

It is therefore not necessary to enter the well-known address in this screen.

To access the LECS ATM address menu select the LECS ATM address option:

```
                         LECS ATM address menu
                 Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
-------------------------------------
1. Display LECS ATM address
2. Display configured LECS ATM address
3. Display Default LECS ATM address
-------------------------------------
4. Change configured LECS ATM address


>>>Enter your choice:
```

Changing the Configured LECS ATM address

1. To change the configured LECS ATM address select Change configured LECS ATM address:

```
 LECS ATM address      : 47.00.79.00.00.00.00.00.00.00.00.00.00.00.
a0.3e.00.00.01.00
      Configured LECS ATM address : using ILMI/WKA/PVC
      Default LECS ATM address    : using ILMI/WKA/PVC


>>> Enter LECS ATM address (xx.xx ... 20 bytes, 0 for using ILMI/WKA/PVC) : 0


>>> PRESS Enter to continue:
```

2. Enter the new address and press Enter. If you enter "0" as the new address, the procedure will use the ILMI, WKA or PVC in that order, as explained at the top of the page.

3. Press Enter to return to the LECS ATM address menu.

4. Reset the module for the changes to take effect (press 0 to return to Main Menu and then 1 to Reset).

ⓘ Enter a specific address only for an ATM switch that does not support ILMI protocol or P.V.C.'s and its LECS address is *not* Well-Known Address (WKA).

12 (9) – ELAN Configuration

This option allows you to display ELAN/VLAN associations and display and change the default ELAN name. To access the ELAN configuration menu select ELAN configuration:

```
                         ELAN Configuration menu
              Visage 16155(R) S/W Version: ____   Slot #: ____


<CR> Refresh the screen


0. Return to Previous Menu
----------------------------------
1. Display ELAN/VLAN associations
2. Display default ELAN information
----------------------------------
3. Change default ELAN name


>>>Enter your choice:
```

Display ELAN/VLAN associations

1. To view current ELAN/VLAN assocations select Display ELAN/VLAN associations. An example is shown here:

```
ELAN/VLAN Associations:


                              Assoc          LecIF
Index   Vlan   Elan           Status         Status         IfIndex
-------------------------------------------------------------------
    1      0   default        Active         Operational       1028
    2      1   elan1          Active         Operational       1029
    4      3   elan3          Active         Operational       1030
    5      4   elan4          Active         Operational       1031
    6      5   elan5          Active         Operational       1032
    7      6   elan6          Active         Operational       1033
    8      7   elan7          Active         Operational       1034
    9      8   elan8          Active         Operational       1035
   10      9   elan9          Active         Operational       1036


>>>Press Enter to continue:
```

These parameters allow you to view the status of the connection between each LEC and its ELAN.

The Association Status column will always display "Active". This column is reserved for future use.

The "LecIf" status column displays the status of the LEC. The status may be one of the following states:

- Initial State
- Initial Registration
- Configure
- BUS Connect
- Join
- Operational

2. Press Enter to return to the ELAN configuration menu.

Displaying Default ELAN information

The default ELAN is the ELAN associated with VLAN 0.

1. To display the default ELAN information, select Display default ELAN information:

```
Default ELAN information (VLAN = 0):


      Association:   1
      Elan name:     default
      Assoc Status:  Active
      LecIf Status:  operational
      IfIndex:       1028


Enter CR to continue:
```

2. The Association value is the Index value which appears in the left-hand column of the ELAN/VLAN associations list.
3. Press Enter to return to the ELAN configuration menu.

Changing the Default ELAN Name

1. To change the default ELAN name select Change default ELAN name:

```
ELAN information for VLAN = 0:


      Association:   1
      Elan name:     default
      Assoc Status:  Active
      LecIf Status:  operational
      IfIndex:       1028


>>> Enter new default ELAN name: alpha


>>>Enter CR to continue:
```

2. Enter the new default name and press Enter.
3. Press Enter to return to the ELAN configuration menu.

13 (10) — ATM Redundancy

This menu only appears for the P117FR, which has a redundant ATM port.

This menu enables and disables the redundancy mechanism. Redundancy can be Enabled or Disabled, and the Active port can be either the Upper or the Lower port.

```
ATM Redundancy menu
   S/W Version: _____     Slot #: 1
<CR> Refresh the screen


0. Return to Previous Menu
-----------------------------------------
1. Display Current redundancy parameters
2. Display Default redundancy parameters
-----------------------------------------
3. Set redundancy parameters to their default values
-----------------------------------------
4. Change redundancy mode


>>>Enter your choice:
```

- To display Current Redundancy Parameters, select **1**.
- To display Default redundancy parameters, select **2**.
- To set redundancy parameters to their default values, select **3**.
   You must Reset the module after changing to the default values.
- To change redundancy mode, select **4**.

14 (11) – Set ATM Port Parameters to their Default Values

This option returns the ATM port parameters to their default values.

```
ATM port default values:

    UNI Version       : 3.1
    Physical Media    : SONET
    ATM Address       : Using ILMI
    LECS ATM Address  : Using ILMI/WKA/PVC
    ELAN Configuration : default ELAN


 Default Redundancy Mode: ENABLE
 Default Active ATM Port: UPPER


*** Set ATM port to default values ***
```

15 (12) – Set Ethernet Port Parameters to their default values

This option returns Ethernet port parameters such as VLAN number and enable status to their default values. It does not affect agent access parameters such as IP addresses, IP Routes, and Permanent Managers. It does not set the ATM port parameters to their default values.

Use this option if, for example in using device management, you accidentally disabled the port to which the management station is connected. If you disable the Ethernet port to which the management station is connected you will no longer be able to contact the P117F(R) from the device manager.
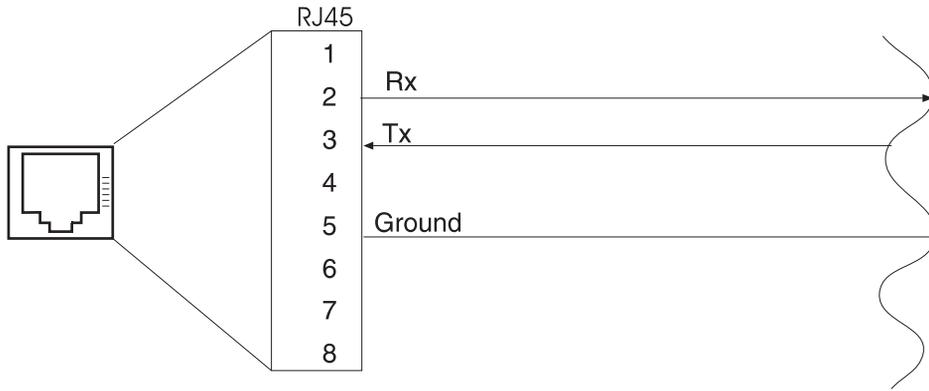
```
>>>Enter your choice:


***WARNING*** Port parameters were changed. Reset the agent!!!


>>>PRESS Enter to continue:
```

Terminal Connector Pin Assignments

Figure 6   Terminal port – RS-232 Wiring Connection to Console Terminal

RJ45

1
2   Rx
3   Tx
4
5   Ground
6
7
8